

Remarks

The Examiner's reconsideration of the application is urged in view of the amendments above and comments which follow.

Claim 1 stands rejected under 35 U.S.C. §103 over the Ultrasonics volume 37 (Wilkins and Koch) reference in view of the Optics Letters volume 24 (Wilkins and Koch) reference.

In the claims, claim 1 has been amended and claim 9 cancelled. Claims 16 to 19 are non-elected and properly identified as "withdrawn."

To clarify the invention, claim 1 has been amended by adding to claim 1 the feature that the interference sensor includes an optical excitation source arranged to transmit optical excitation pulses through the sensor head into the samples.

This corresponds to former claim 9 with the addition of the word "optical". Applicants note that this clearly distinguishes from the citations by Wilkins and Koch which use an separately generated ultrasound wave generated by ultrasound broadband transducer BBT and generator PG - see Ultrasonics 37 Figure 5 (page 48) and Optics Letters 24 Fig. 1.

The present invention provides a sensor that measures the results of exciting a sample by ultrasound. Applicants submit that it is highly non-obvious to generate the ultrasound waves in the sample by using an optical excitation through the sensor head, instead of a conventional ultrasound transducer and generator.

Further, Applicants note that the references do not include the claimed feature of an optical excitation source arranged to transmit optical excitation pulses through the sensor head. This gives the benefit that a separate ultrasound generator is not required. Accordingly, Applicants respectfully submit that amended claim 1 is both novel and non-obvious in view of the references.

Further, Examiner asserts that Ultrasonics shows a polymer film of substantially uniform thickness disposed over a substrate as recited in claim 1. However, it is clear in Ultrasonics that the whole of the paper relates to a fiber tip coated with a dielectric multi-layer system - see the Ultrasonics abstract, first sentence. Although polymer films are mentioned, they are only mentioned in the introduction as an alternative approach with reference to a different arrangement, and it is submitted that the detail of the described arrangement which relates to dielectric

film sensors cannot be assumed to apply to a polymer film arrangement, and so claim 1 is in fact not anticipated.

As for the dependent claims 2 to 15, firstly Applicants submit that all the dependent claims are both novel and non-obvious as being dependent upon an allowable main claim.

Further, Applicants submit that claim 10 is independently novel and non-obvious as referring to a laser as the excitation source for ultrasonic waves, which is not taught or suggested by the references.

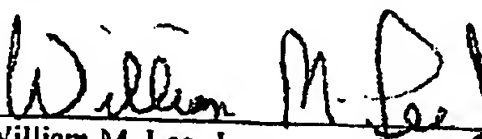
Claims 11 and 12 stand rejected based on Figure 4 of the Optics Letters paper. However, claim 11 refers to a beam expander between the sensor head and the optical detector system to enable the special resolution and feed the view to be adjusted. Claim 12 refers to an optical arrangement for controlling the beam divergence to control the dynamic range of the sensor. Applicants submit that neither of these are a "micro lens array" as described in the prior art document.

Applicants thank the Examiner for identifying allowable subject matter in claim 15.

In view of the above, Applicants respectfully submit that claims 1 to 15 of this application are in condition for allowance.

Respectfully submitted,

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